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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,698	03/23/2004	Jan Prochazka	10225/56 (A19)	2425

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EXAMINER

NGAMPA, BRIGET P

ART UNIT	PAPER NUMBER
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1792

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/806,698	Applicant(s) PROCHAZKA ET AL.	
	Examiner Briget P. Ngampa	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-12, 14, 15, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-9, 13, 16, 17 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/10/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1, 2, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by W.R.Whately (U.S.patent number 3,127,280, hereafter '280).

With respect to claim 1, '280 teach in example 1, a process for making surface-modified ceramic materials (titanium dioxide) comprising:

- a. creating a thin layer of a titanium phosphate [col 3, line 40] on a base material (surface of titanium dioxide) [col 3, line 43-44];
- b. subsequently treating with a strong base [col 3, line 50-51], the slurry is then neutralized to pH 8.0 with sodium hydroxide (strong base); and
- c. washing the product of step b, [col 3, line 51-52].

With respect to claim 2, '280 teach the limitation of claim 1 further it teaches drying the product after washing [col 3, line 53].

With respect to claims 10, 11 and 12, '280 teach that the base material is titanium dioxide [col 3, line 28-29].

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 18 and 19 recites the limitation "saturating the surface" in both steps a.

There is insufficient antecedent basis for this limitation in the claim. It is unclear as to what surface is being saturated.

The relative term "thin" in claims 1 and 20 renders the claims vague and indefinite because it does not convey the intended thickness and the term is not defined by the specification nor ascertain by one of ordinary skill.

Claim Objections

3. Claim 11 is objected to because of the following informalities: the term "or" makes an improper Markush group, it should be changed to an "and". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whatley (U.S.patent number 3,127,280, hereafter '280) in view of Kasugai et al. (Patent number 3,936,304, hereafter '304).

'280 teach the limitation of claim 2, it does not teach calcining the dried product. '304 teach that calcining of phosphate coated TiO_2 pigments may take place after drying [col 7, line 41] in a furnace in order to have easier dissociation during further processing. It would have been obvious to one of ordinary skills in the art at the time the invention was made to have added a calcining step in order have an easier dissociation during further processing because calcining is heating to the temperature of dissociation.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whatley (U.S.patent number 3,127,280, hereafter '280) in view of Komatsu et al. (Patent number 6,365,545, hereafter '545).

'280 teach the limitation of claim 12, it does not teach the ceramic metal oxide consists of nano-sized particles with a size between 20 and 100 nm. '545 teach that metal oxide such as TiO_2 has particle diameter of 30-1000nm [col 11, line 37-40] because any particle diameter out of this range would require special manufacture technique therefore higher cost. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a particle diameter such as this to avoid special manufacture technique and higher cost.

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6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whatley (U.S. patent number 3,127,280, hereafter '280) in view of Banford et al. (Patent number 5,785,748, hereafter '748).

'280 teach the limitation of claim 1; it does not teach that the strong base is KOH. '748 teach that potassium hydroxide is a preferred alkaline compound for adjusting the pH of TiO₂ pigment slurries [col2, line 7-9]. It would have been obvious to one of ordinary skills in the art at the time of the invention to have used potassium hydroxide as a strong base because '748 teaches that it is a suitable strong base.

Allowable Subject Matter

7. Claims 4 – 9, 13, 16-17 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 18 and 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: '280 is discussed above. It does not teach subsequently washing the product to form a gelatinous layer of titanium oxide hydrate on the base material. The prior art as a whole does not fairly teach or suggest contacting washed titanium phosphate with a strong acid then washing to form a gelatinous layer of titanium oxide hydrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Briget P. Ngampa whose telephone number is 571-270-1866. The examiner can normally be reached on M-F, 830-3:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bpn


FRED J. PARKER
PRIMARY EXAMINER